In The Claims:

1. (withdrawn) An improved bell atomizer for use in electrostatic applications having a bell housing and an aluminum bell cup, the improvement comprising:

a coating formed on a surface of the aluminum bell cup.

2. (withdrawn) The bell atomizer according to claim 1, wherein said coating comprises a wear resistant coating.

3. (withdrawn) The bell atomizer according to claim 2, wherein said wear resistant coating comprises a silicon-doped amorphous carbon coating.

4. (withdrawn) An improved bell atomizer for use in electrostatic applications having a bell housing and a titanium bell cup, the improvement comprising:

an adhesion promoter applied to a surface of the titanium bell cup; and

a coating formed on said adhesion promoter.

5. (withdrawn) The bell atomizer of claim 4, wherein said adhesion promoter comprises a layer of sputtered chrome.

6. (withdrawn) The bell atomizer according to claim 4, wherein said coating comprises a wear resistant coating.

7. (withdrawn) The bell atomizer according to claim 6, wherein said wear resistant coating comprises a silicon-doped amorphous carbon coating.

8. (currently amended) A method for improving wear resistance of the outer surface of an aluminum bell cup, the method comprising the steps of:

preparing the outer surface of the aluminum bell cup;

~~applying a wear resistant coating to said outer surface~~ placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons; and

applying a predetermined frequency and voltage bias from said power source for a predetermined time to coat the outer surface of the aluminum bell cap with a silicon-doped hydrocarbon composition at a predetermined film thickness.

9. (original) The method according to claim 8, wherein the step of preparing the outer surface of the aluminum bell cup comprises the steps of:

cleaning said outer surface;

etching said outer surface;

rinsing said outer surface;

drying said outer surface; and

atomically cleaning said outer surface.

10. (original) The method according to claim 9, wherein the step of cleaning said outer surface comprises the steps of:

cleaning said outer surface with a soap solution;

cleaning said outer surface with water; and

cleaning said outer surface with solvent.

11. (original) The method according to claim 9, wherein the step of etching said outer surface comprises the steps of:

etching said outer surface with a 5% solution of sodium hydroxide for a predetermined time;

rinsing said outer surface with water; and

etching said outer surface with a 1% nitric acid solution for a second predetermined time under ultrasonic agitation.

12. (original) The method according to claim 9, wherein the step of drying said outer surface comprises the step of:

blow drying said outer surface with air; and

placing the aluminum bell cup in a vacuum pressure chamber for a predetermined time at a predetermined pressure.

13. (original) The method according to claim 9, wherein the step of atomically cleaning said outer surface comprises the steps of:

atomically cleaning said outer surface by argon bombardment at 200 volts;

atomically cleaning said outer surface by argon bombardment at 500 volts; and

atomically cleaning said outer surface by argon bombardment at 200 volts.

14. (cancelled)

15. (currently amended) The method according to claim ~~14~~ 8, wherein the step of placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of methane and tetramethylsilane.

16. (currently amended) A method for improving wear resistance of the outer surface of a titanium bell cup, the method comprising the steps of:

preparing the outer surface of the titanium bell cup; ~~and~~

applying an adhesion promoter coating to the outer surface;

~~applying a wear resistant coating to the adhesion promoter coating~~ placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons; and

applying a predetermined frequency and voltage bias from said power source for a predetermined time to coat said adhesion promoter coating with a silicon-doped hydrocarbon composition at a predetermined film thickness.

17. (original) The method according to claim 16, wherein the step of preparing said outer surface of the titanium bell cup comprises the steps of:

cleaning said outer surface;

etching said outer surface;

rinsing said outer surface;

drying said outer surface; and

atomically cleaning said outer surface.

18. (original) The method according to claim 17, wherein the step of cleaning said outer surface comprises the steps of:

cleaning said outer surface with a soap solution;

cleaning said outer surface with water; and

cleaning said outer surface with solvent.

19. (original) The method according to claim 17, wherein the step of etching said outer surface comprises the steps of:

etching said outer surface for a predetermined time in a 3% nitric acid in ethanol solution under ultrasonic agitation;

rinsing said outer surface with water; and

immersing the titanium bell cup in ethanol for a second predetermined time under agitation.

20. (original) The method according to claim 17, wherein the step of drying said outer surface comprises the step of:

blow drying said outer surface with air; and

placing the titanium bell cup in a vacuum pressure chamber for a predetermined time at a predetermined pressure.

21. (original) The method according to claim 17, wherein the step of atomically cleaning said outer surface comprises the steps of:

atomically cleaning said outer surface by argon bombardment at 200 volts;

atomically cleaning said outer surface by argon bombardment at 500 volts; and

atomically cleaning said outer surface by argon bombardment at 200 volts.

22. (original) The method according to claim 16, wherein the step of applying an adhesion promoter coating to said outer surface comprises the step of sputtering a layer of chrome on said outer surface to a predetermined thickness.

23. (cancelled)

24. (currently amended) The method according to claim ~~23~~ 16, wherein the step of placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of methane and tetramethylsilane.

25. (currently amended) A method for improving wear resistance of the outer spraying surface of spray application equipment, the method comprising the steps of:

preparing the outer spraying surface of the spray application equipment;

~~applying a wear resistant coating to said outer spraying surface~~ placing the spray application equipment in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons; and

applying a predetermined frequency and voltage bias from said power source for a predetermined time to coat the outer spraying surface of the spray application equipment with a silicon-doped hydrocarbon composition at a predetermined film thickness.

26. (previously presented) The method according to claim 25, wherein the step of preparing the outer spraying surface of the spray application equipment comprises the steps of:

cleaning said outer spraying surface;

etching said outer spraying surface;

rinsing said outer spraying surface;

drying said outer spraying surface; and

atomically cleaning said outer spraying surface.

27. (previously presented) The method according to claim 26, wherein the step of cleaning said outer spraying surface comprises the steps of:

cleaning said outer spraying surface with a soap solution;

cleaning said outer spraying surface with water; and

cleaning said outer spraying surface with solvent.

28. (previously presented) The method according to claim 26, wherein the step of etching said outer spraying surface comprises the steps of:

etching said outer spraying surface with a 5% solution of sodium hydroxide for a predetermined time;

rinsing said outer spraying surface with water; and

etching said outer spraying surface with a 1% nitric acid solution for a second predetermined time under ultrasonic agitation.

29. (previously presented) The method according to claim 26, wherein the step of drying said outer spraying surface comprises the step of:

blow drying said outer spraying surface with air; and

placing the spray application equipment in a vacuum pressure chamber for a predetermined time at a predetermined pressure.

30. (previously presented) The method according to claim 26, wherein the step of atomically cleaning said outer spraying surface comprises the steps of:

atomically cleaning said outer spraying surface by argon bombardment at 200 volts;

atomically cleaning said outer spraying surface by argon bombardment at 500 volts; and

atomically cleaning said outer spraying surface by argon bombardment at 200 volts.

31. (cancelled)

32. (currently amended) The method according to claim ~~31~~ 25, wherein the step of placing the spray application equipment in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the spray application equipment in a chamber containing a power source and a gaseous mixture of methane and tetramethylsilane.

33. (currently amended) The method of claim 25 further comprising the step of applying an adhesion promoter to said outer spraying surface of the spray application equipment prior to the step of ~~applying a wear resistant coating to said outer spraying surface~~ placing the spray application equipment in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons.

34. (currently amended) The method according to claim ~~25~~ 33, wherein the step of applying an adhesion promoter coating to said outer spraying surface comprises the step of sputtering a layer of chrome on said outer spraying surface to a predetermined thickness.

35.-55. (cancelled)

56. (new) The method according to claim 8, wherein the step of placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of methane and diethylsilane.

57. (new) The method according to claim 8, wherein the step of placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of a first hydrocarbon and tetramethylsilane, said first hydrocarbon selected from the group consisting of acetylene, ethene, butane, pentyne, and benzene.

58. (new) The method according to claim 8, wherein the step of placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of a first hydrocarbon and diethylsilane, said first hydrocarbon selected from the group consisting of acetylene, ethene, butane, pentyne, and benzene.

59. (new) The method according to claim 16, wherein the step of placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of methane and diethylsilane.

60. (new) The method according to claim 16, wherein the step of placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of a first hydrocarbon and tetramethylsilane, said first hydrocarbon selected from the group consisting of acetylene, ethene, butane, pentyne, and benzene.

61. (new) The method according to claim 16, wherein the step of placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and silicon-doped hydrocarbons comprises the step of:

placing the titanium bell cup in a chamber containing a power source and a gaseous mixture of a first hydrocarbon and diethylsilane, said first hydrocarbon selected from the group consisting of acetylene, ethene, butane, pentyne, and benzene.

62. (new) A method for improving wear resistance of the outer surface of spray application equipment, the method comprising the steps of:

preparing the outer surface of the spray application equipment;

placing the spray application equipment in a chamber containing a power source and a gaseous mixture of hydrocarbons and tungsten-doped hydrocarbons; and

applying a predetermined frequency and voltage bias from said power source for a predetermined time to coat the outer surface of the spray application equipment with a tungsten-doped hydrocarbon composition at a predetermined film thickness.

63. (new) The method according to claim 62, wherein the spray application equipment comprises an aluminum bell cup.

64. (new) The method according to claim 62, wherein the spray equipment comprises a titanium bell cup coated with an adhesion promoter.

65. (new) A method for improving wear resistance of the outer surface of an aluminum bell cup, the method comprising the steps of:

preparing the outer surface of the aluminum bell cup;

placing the aluminum bell cup in a chamber containing a power source and a gaseous mixture of hydrocarbons and titanium-doped hydrocarbons; and

applying a predetermined frequency and voltage bias from said power source for a predetermined time to coat the outer surface of the aluminum bell cap with a titanium-doped hydrocarbon composition at a predetermined film thickness.

66. (new) The method according to claim 65, wherein the spray application equipment comprises an aluminum bell cup.

67. (new) The method according to claim 66, wherein the spray equipment comprises a titanium bell cup coated with an adhesion promoter.